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ORIGINAL PAPER

Coaches and Clients in Action: A Sequential Analysis of Interpersonal Coach and Client Behavior

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Abstract
Purpose Despite calls for studying interaction processes in coaching, little is known about the link between coach–client interactions and coaching success. In particular, interpersonal behavior in coaching remains unexplored, although it is considered highly relevant to social relationships and interaction outcomes. This study takes first steps to address this gap.
Design/Methodology/Approach We examined the dynamics of coaches' and clients' interpersonal behavior based on the two basic dimensions affiliation and dominance. Furthermore, we investigated the link between emergent interpersonal behavior patterns and coaching outcomes. To this end, we videotaped and analyzed a total of 11,095 behavioral acts nested in 30 coach–client dyads.
Findings Sequential analysis showed that reciprocal friendliness patterns were positively linked to working alliance. Coaches' dominant–friendly interaction behavior particularly activated clients, in terms of showing dominance during the coaching interaction process. Clients' dominance was linked to their overall goal attainment.
Implications Our results highlight the importance of interpersonal behavior for coaching success. Specifically, our findings suggest that dominance interaction patterns are context- and relation-specific, offering an explanation for contradicting empirical studies on interpersonal dominance. For coaches, our study implies that high awareness for interpersonal signals can help establish a positive atmosphere and activate clients' dominance.
Originality/Value This empirical study uses behavior observation and interaction analysis to understand the interpersonal dynamics during coaching sessions. Our results increase our theoretical understanding of coaching effectiveness by shedding light on the micro-level behavioral dynamics that drive successful coaching processes.

Keywords Career coaching · Coach–client interaction · Working alliance · Lag sequential analysis

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Introduction

Coaching is an effective tool for enhancing clients' personal and professional development (for an overview, see Grant et al. 2010; Smither 2011). Successful coaching largely depends on the quality of the relationship between coaches and their clients (e.g., Baron and Morin 2009; Bluckert 2005; De Haan et al. 2013; O'Broin and Palmer 2010; Wasylyshyn 2003). A coaching relationship develops on the basis of complex coach–client interactions (e.g., Cavanagh 2006). However, our understanding of the interaction processes during coaching remains limited. It is unclear how the interaction dynamics between coaches and clients contribute to a positive coaching relationship (De Haan 2008a; O'Broin and Palmer 2010). Addressing this gap requires a closer look at the actual behavior of coaches

and clients during coaching sessions, as well as interaction analytical methods that can pinpoint mutual influence in coach–client interactions.

To begin to understand how coaches affect their clients (and vice versa) and how specific interaction patterns relate to coaching success, we focus on the nonverbal behavior of coaches and clients during coaching sessions. Nonverbal behavior is particularly important for understanding the interpersonal meaning and relational relevance of interaction behavior (Burgoon 1995; Guerrero and Floyd 2006; Mehrabian 1972; Schachner et al. 2005; Schyns and Mohr 2004). In other words, nonverbal behavior during coach–client interactions expresses the quality of the interpersonal relationship between coaches and clients. Nonverbal behavior can be explored on the basis of the two interpersonal dimensions affiliation and dominance (e.g., Mehrabian 1969; Luxen 2005). In the context of coaching, the affiliation dimension describes how friendly (positive extreme) or hostile (negative extreme) coach and client behave during their interactions (Kiesler 1996; Leary 1957). The second dimension, interpersonal dominance, comprises the extremes dominance and submissiveness (Kiesler 1996; Leary 1957). On the basis of this dimension, coaches' and clients' self-confidence and assertiveness can be examined (Burgoon and Dunbar 2000). The dimensions affiliation and dominance are considered fundamental to social behavior and have been described as "the ink with which human action is written" (Luxen 2005, p. 332).

The impact of interpersonal affiliation and dominance has been analyzed in therapist–client interactions (e.g., Heller et al. 1963; Tracey 2004) and supervisor-subordinate interactions (e.g., Chen and Bernstein 2000). However, coaching is distinct from other counseling settings such as psychotherapy. Differences include the emotional depth of therapy compared to coaching issues or the emotional stability of clients (e.g., Hart et al. 2001; Peltier 2010). Moreover, coach–client relationships are considered far less hierarchical than therapist-client relationships (Grant 2005, 2013). Given these differences, it is important to understand the specific interaction processes and mutual behavioral influences in coaching, a research gap that is yet to be addressed (e.g., Alvey and Barcley 2007; Kilburg 1996).

Most previous coaching research has relied on surveys or retrospective data (for an overview, see Grant et al. 2010), which do not grasp the dynamic qualities of interpersonal behavior (Reis et al. 2000) and do not allow analyzing interpersonally relevant nonverbal behavior (cf. Burgoon 1995; Guerrero and Floyd 2006). Behavioral observations can address this issue (Baesler and Burgoon 1987). Moreover, interaction analytical approaches from the field of team process research (e.g., Lehmann-Willenbrock et al. 2013, 2011) can inform research on the dynamic interaction processes between coaches and clients. Some initial findings indicate that coaches' interpersonal behavior during coaching interaction processes affects the clients' perceptions of relationship quality and coaching success (Ianiro et al. 2012). However, the dynamic interpersonal *process* behind this link remains unclear.

Taking first steps to address this gap, this study offers several contributions. First, we analyze the impact of affiliation and dominance in the course of a coaching session to identify interpersonal behavioral patterns. Based on behavioral observations, we focus on nonverbal interpersonal behavior. We apply sequential analysis to show how coaches' interpersonal behavior influences the interpersonal behavior of their clients and vice versa. Finally, we link the clients' interpersonal behavior to overall coaching success.

Interpersonal Behavior of Coaches and Clients During the Coaching Process

Interpersonal interactions are at the core of social relationships between individuals (e.g., Burgoon et al. 1995; Hinde 1979a, b; Kelley et al. 1983, 2003). "Each partner's behavior affects the other partner's subsequent behavior within a single interaction episode and each interaction episode influences future episodes" (Reis et al. 2000, pp. 845). Scholars have pointed out that it can actually be difficult to draw the line between a single interaction episode, an interaction stream, and a relationship (e.g., Regan 2011). In general, an interaction episode "involves an isolated exchange (or set of exchanges) that occurs within a limited span of time, whereas a relationship involves repeated interactions over a longer duration of time" (Regan 2011, p. 4; see also Reis et al. 2000).

Interdependency and mutual influence are important aspects of interpersonal interactions (see, e.g., Berscheid and Reis 1998; Hinde 1979a, b; Kelley et al. 1983). The way one interactant begins an interaction affects the behavioral options of the other (Kelley et al. 1983, 2003; Kiesler 1996). In other words, each partner's (verbal and nonverbal) behavior influences the other partner's subsequent behavior (Berscheid and Reis 1998). This results in non-random interaction patterns (e.g., Burgoon et al. 1995; Kiesler 1996). Current interaction sequences influence future sequences and the evolving relationship (Hinde 1999). In order to explore such behavior sequences, the interaction stream needs to be segmented and analyzed in a chronological manner (e.g., Allison and Liker 1982; Bakeman and Quera 2011; Schermuly and Scholl 2012). A single interaction segment or 'unit' can be defined as "a bit of behavior (usually verbal) which can provide enough of a stimulus to elicit a meaningful response from another

person"(Hare 1973, p. 261). Following this approach, this study analyzes sequences of interpersonal behavior during coach–client interactions in order to understand the conversational dynamics that constitute evolving coaching relationships and ultimately impact coaching success.

Numerous communication and interpersonal theories have examined *how* the interaction behavior of one interactant is answered by the interacting partner and how interacting partners adapt to one another over the course of their interaction process (for an overview, see Burgoon et al. 1995; Kiesler 1996). A basic assumption of theoretical approaches aiming to understand social interaction processes is that of similar or convergent response behaviors versus dissimilar or divergent response behaviors (Burgoon et al. 1993). Similar response behavior is considered to occur due to the norm of reciprocity (see Gouldner 1960), in terms of "the shared expectation that the recipient of a resource is obligated to and at some time will return to the giver a resource roughly equivalent to that which was received" (Roloff and Campion 1985, p. 174). Moreover, similar response behavior can occur due to verbal and nonverbal synchronization among interactants (e.g., Barsade 2002; Street and Cappella 1985). Dissimilar response behavior may occur in order to compensate for or complement specific interaction behavior (e.g., Burgoon et al. 1993; Kiesler 1996).

Interpersonal Dimensions: Affiliation and Dominance

In the specific context of coaching, interpersonal behavior plays a key role for understanding coaching processes and outcomes. The interpersonal fit between coach and client facilitates the interaction and cooperation during the coaching process (Ianiro et al. 2012). Interpersonal behavior can be described with two interpersonal basic dimensions: affiliation and dominance (Luxen 2005). These two dimensions are central to several social psychology theories, including interpersonal theory (e.g., Leary 1957; Kiesler 1996), evolutionary theory (Buss 1996), and motivational theories (McClelland 1987). Interpersonal behavioral anchors associated with affiliation and dominance have been identified in the context of emotion expression, verbal, and nonverbal communication (e.g., Kelley et al. 2003; Mehrabian 1969; Osgood et al. 1957; Shaver et al. 1987; Wish et al. 1976). However, expressions of interpersonal affiliation and dominance can be observed predominantly in terms of interactants' nonverbal behavior (Scholl 2013). Hence, coaches can use their client's respective nonverbal expressions for orientation, for adapting to the behavior of the client, or for getting the client more involved in the coaching process.

The affiliation dimension describes interpersonal behavior in terms of the degree of friendliness (positive extreme) or hostility (negative extreme) (Kiesler 1996; Leary 1957). Friendliness as a high degree of affiliation supports the formation of an affective bond between interaction partners (Burgoon et al. 2010). Examples of nonverbal friendly behavior are smiling and eye-contact (Burgoon and Le Poire 1999; Guerrero and Floyd 2006). With these kinds of (nonverbal) interpersonal behavior, coaches can express sympathy and interest (Burgoon and Le Poire 1999; Mehrabian 1969). Behavioral cues associated with hostility are, for example, demonstrating impatience or disinterest (Moskowitz 1994) or turning away one's body from the interacting partner (Schermuly and Scholl 2012).

The second dimension, interpersonal dominance, describes the degree to which an interactant behaves in an assertive, self-confident manner (Burgoon and Dunbar 2000). This second dimension comprises the extremes 'dominance' and 'submissiveness' (Kiesler 1996; Leary 1957). Examples of nonverbal dominant behavior are postural expansion and relaxation (Cashdan 1998; Scholl 2013; Tiedens and Fragale 2003) and a clear firm voice (Moskowitz 1994). Examples of nonverbal submissiveness include postural constriction and quiet speaking or stuttering (e.g., Tiedens and Fragale 2003). Through (nonverbal) interpersonal behavior such as an adequate loudness of voice and articulated speech, coaches can emphasize their guiding role within the coaching process.

Interpersonal Behavior

Interpersonal affiliation and dominance can be analyzed not only in single interaction units (microanalytic level), but also across time or across different interacting partners and situations (macroanalytic level; Kiesler 1996). When combined in a model, the affiliation dimension can be depicted on a horizontal axis and the dominance dimension on a vertical axis (Kiesler 1996; Leary 1957). Distinct combinations of interpersonal affiliation and dominance are depicted in the interpersonal circumplex model (e.g., Kiesler 1996, see Fig. 1; Table 1). The interpersonal circumplex model offers an empirically supported framework for analyzing the impact of interpersonal behavior and interpersonal dynamics across social and professional contexts (Kiesler and Auerbach 2003; Markey et al. 2005).

The Role of Interpersonal Behavior in Coaching Interaction Processes

The dynamics of interpersonal behavior have been analyzed in physician-patient interactions (e.g., Tracey 2004), parent–child interactions (e.g., Markey et al. 2005), peers',

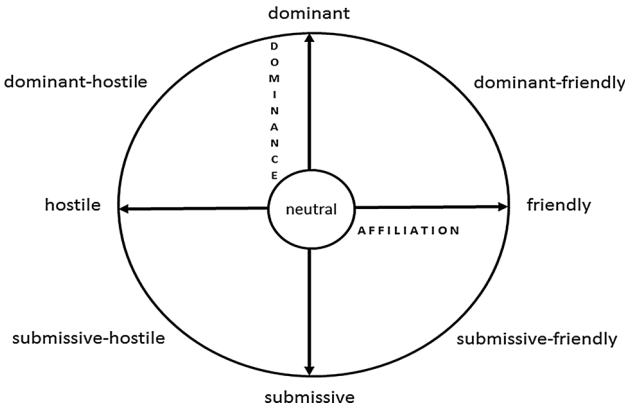

Fig. 1 Interpersonal circumplex model (adapted from Kiesler 1996). Combinations of interpersonal dominance and affiliation

friends', and partners' interactions (e.g., Tracey et al. 2001), but not in the context of coaching. Interpersonal affiliation and dominance have been analyzed on the basis of trait ratings as well as on the basis of interaction behavior, and have been used to describe situational dynamics in which interacting partners exert mutual influence (cf. Kiesler 1996; Sadler and Woody 2003; Tracey 2004). Interpersonal affiliation and dominance behavior has been linked to therapy outcomes (Henry et al. 1990) and to interpersonal patterns in therapist–patient–relationships (e.g., Kiesler 1996; Kiesler and Auerbach 2003). Research from therapeutical settings further shows that patients increase their dominance scores after successful treatment (Salzer 2010). However, in the specific context of coaching, it remains to be seen how interpersonal expressions affect the coaching interaction process as well as coaching outcomes.

Coaches can express different combinations of affiliation and dominance. For example, a coach can ask a question with a quiet voice, while smiling and playing with a pen; or the coach can pose a question with a loud voice, accompanied by expressive gestures and smiling. In the first case, high affiliation is combined with submissiveness, resulting in submissive-friendly interpersonal behavior. In the second case, the interpersonal behavior would be evaluated as dominant-friendly (Kiesler 1996; Schermuly and Scholl 2012). Finally, a coach who interrupts the client to ask a question (without showing any cues of friendliness) would show a dominant-neutral interpersonal behavior (cf. Aries et al. 1983; Farley 2008; see Table 1).

When expressed during interactions, each behavioral combination of affiliation and dominance tends to elicit specific responses from the interacting partner (Heller et al. 1963; Leary 1957). These responses can fall under one of

Table 1 Operationalization of nonverbal interpersonal behavior combinations

Interpersonal behavior	Sample behaviors: the coach	Sample behaviors: the client
Submissive behavior		
Submissive-friendly	… Looks up to the client from below, fumbles with a pen, smiles, then hesitantly speaks to the client and asks a question	… Moves nervously, shrugs his/her shoulders, replies smiling with a heightened voice 'I don't know what I want'
Submissive-neutral	… Hesitantly points to the end of the coaching session, frequently uses subjunctive and conditional forms	… Makes the body small and expresses resignation
Submissive-hostile	… Makes a sarcastic comment, speaks quietly	… Frowns, quietly stutters, facially expresses annoyance, avoids eye-contact
Neutral behaviour		
Neutral-friendly	… Compliments and praises the client, laughs with the client	… Smiles back and thanks the coach
Neutral–neutral	… Asks a question (neutral mimic, no gesturing, no interrupting)	… Shortly replies (neutral mimic, no gesturing, no interrupting)
Neutral-hostile	… Impatiently glances at the watch and advices the client to make it short	… Ignores the coach's messages and begins to complain about the coach's approach, turns away his/her body
Dominant behavior		
Dominant-friendly	…Leans forward to the client, asks the client with a clear firm voice to fill in a survey, while keeping eye-contact and smiling	…Expresses the own preference to fill in the survey in the next session in a friendly way.
Dominant-neutral	… Interrupts the client to ask a question (neutral mimic)	…Replies, heavily gesturing, then leans back and demonstrates relaxation
Dominant-hostile	.. Interrupts and contradicts the client, while smiling derisively	…Successfully tends off the interruption from the coach, frowning, repeats the sentence with a loud voice

For a detailed description of the different behavioral categories, see Schermuly and Scholl (2012)

the two principles discussed in the literature, namely dissimilarity or similarity of interpersonal behavior (e.g., Burgoon et al. 1993; Dryer and Horowitz 1997; Jacobs 2008). On the one hand, theoretical dissimilarity assumptions describe how interacting parties can show interpersonal reactions that are different from preceding behaviors by the other interacting party. For example, on the dominance dimension of interpersonal behavior, dissimilar or opposed behavior would include conversational moments in which dominance evokes submission by the interacting partner, and vice versa. Interpersonal theorists have posited that interactants ideally harmonize when they show opposite behavior on the dominance dimension, thus establishing a hierarchy (Tiedens and Fragale 2003), whereas they should reciprocate behavior on the affiliation dimension (Carson 1969; Kiesler 1996). In the context of coaching, this line of reasoning implies that an ideal coach–client interaction would include dominant-friendly behavior by coaches that trigger submissive-friendly client reactions. Interactions that are characterized by dissimilar patterns on the dominance dimension (when at the same time reciprocating on the affiliation dimension) have been linked to reciprocal liking among interactants (Tiedens and Fragale 2003), satisfaction with the interaction (Dryer and Horowitz 1997; Tracey 2004), and the performance of interacting partners in experimental settings (Estroff and Nowicki 1992).

On the other hand, the similarity model of interpersonal behavior states that similarity in terms of both affiliation and dominance contributes to an ideal fit in social interactions, particularly if interactants have a close relationship (Jacobs 2008). In the context of coaching, the similarity model would suggest that ideal coach–client interactions are characterized by patterns such as dominant-friendly coach behavior being followed by dominant-friendly client behavior. The similarity model of interpersonal behavior has found empirical support particularly in the field of interpersonal attraction. The similarity-attraction hypothesis (e.g., Duck 1973) suggests that similar personality characteristics are related to mutual attraction and liking (for an overview, see Dryer and Horowitz 1997). Moreover, research on emotions and nonverbal behavior has shown an assimilation or 'synchronization' of interaction behavior in the course of the interaction. The underlying mechanism has been described as automatic motormimicry or emotional contagion, i.e., the tendency to automatically mimic the nonverbal behavior or emotional expressions of interacting partners (e.g., Barsade 2002; Hatfield et al. 1994; Lehmann-Willenbrock et al. 2011). Seen through the lens of emotional contagion, nonverbal expressions of positive affect or friendliness (i.e., affiliation) will likely evoke similarly friendly expressions from the interacting partner. Such similarity can be adaptive, as research shows that the synchronization of (positive) social behaviors supports the development of an affective bond between interactants (e.g., Hess et al. 1999; Rosenfeld 1967).

It remains to be seen how coaches affect their clients through interpersonal behavior, and how specific interaction patterns within the coach–client interaction process are related to coaching success. To gain insight into the interpersonal dynamics at work in the coach–client interaction processes, we address the influence of both affiliation and dominance separately and the effect of distinct combinations of these dimensions.

Reciprocity of Affiliation Expressions Within the Coaching Interaction Process

A coach is expected to exhibit a caring and encouraging attitude towards the client, to listen attentively and thus to provide a comfortable atmosphere for the client (De Haan 2008a). This role description suggests that typical coach behavior includes the nonverbal expression of friendliness. A coach can transmit a friendly attitude by means of nonverbal signals, such as eye contact, smiling and speaking in a soft, pleasant voice. On the other hand, coaches can also nonverbally express hostility, for example by turning away from the client, furrowing their brows or showing impatience or indifference by means of restlessness (Moskowitz 1994; Schermuly and Scholl 2012; see Table 1).

The similarity hypothesis described above posits that friendly interpersonal behavior evokes friendly behavior in the interacting partner, whereas hostile behavior evokes hostile behavior. This assumption has found support in several empirical studies (e.g., Dryer and Horowitz 1997; Moskowitz et al. 2007), including samples in different professional contexts, for example psychotherapy samples (e.g., Tracey 2004). In line with these findings, we argue that coaches' affiliation signals should provoke similar client affiliation behavior. Thus, we propose:

H1a Within the coaching interaction process, the affiliation behavior of the coach evokes similarly affiliative client behavior.

Similarly, we would assume that clients' affiliation evokes similar coach behavior within their interaction process. However, given the professional role of the coach, we would expect a difference between coaches and clients with regard to the expression of hostility. Whereas hostile client behavior could be feasible in specific coaching situations, albeit irritating or annoying for the coach, a hostile coach response appears rather improbable. A coach will likely suppress the impulse to reciprocate hostile client behavior and rather attempt to (re)establish a pleasant atmosphere (cf. McKenna and Davis 2009). In line with

this idea, previous research points at effortful inhibiting processes, based on social norms and expectations that can come into play despite an unconscious tendency to mimic nonverbal behavior and emotions (e.g., Barsade 2002). Taken together, hostile coach reactions to hostile client behavior are not likely. However, for neutral or friendly client behavior within the coaching interaction process, we would expect similar behavioral responses by the coach. For neutral or friendly client behaviors and subsequent coach responses, the reciprocity mechanisms at play for coach–client reactions should hold true as well. Thus, with regard to coaches' reactions to clients' affiliation, we hypothesize:

H1b Within the coaching interaction process, clients' affiliation in terms of friendliness or neutrality evokes similarly affiliative coach behavior.

Previous research shows that reciprocity of friendliness or positive affect (e.g., Barsade) is linked to better evaluations of the interaction process and increased liking Barsade 2002; Dryer and Horowitz 1997; Tiedens and Fragale 2003; Tracey 2004). Similarly, in the context of coach–client interaction processes, reciprocal expressions of friendliness should create a positive atmosphere and build a fruitful coaching relationship. As a result, clients who experience reciprocal friendliness should evaluate the relationship quality with their coach as higher (e.g., Baron and Morin 2009; Wasylyshyn 2003). Thus, with regard to the quality of coach–client interactions and the resulting relationship, we propose:

H1c The extent of reciprocity of friendliness within the coaching interaction process is positively related to relationship quality as perceived by the client.

Dominance Expressions Within the Coaching Interaction Process

Interpersonal dominance is expressed when an interactant takes control of the interaction (Dunbar and Burgoon 2005). Previous research suggests that coaches need to be dominant to some extent, in the sense of showing assertive and confident behavior, in order to promote their clients' coaching success (Burgoon and Dunbar 2000; De Haan 2008a). Coaches' dominance behavior appears to be positively related to client's goal attainment (Ianiro et al. 2012). Yet, why and how dominance behavior by coaches relates to clients' success, and what actually happens in interaction processes between dominant coaches and their clients, remains to be seen.

Some expressions of dominance may be inherent in the role of the coach, as he or she aims to structure and guide the coaching process. This is particularly relevant early on in the coaching process, when the client still needs considerable guidance for exploring problems and initiating the search for solutions (i.e., in the first or second coaching session). Although this line of reasoning is somewhat intuitive, there is a pronounced lack of empirical research in this context. Dominant behavior of a coach may be answered by submissive (i.e., dissimilar or opposite) or dominant (i.e., similar) client behavior. As outlined above, we find theoretical support for both directions. The question is which client behavior is more likely to occur as response to expressions of dominance by a coach.

A client's expressions of dominance correspond to the degree to which he or she behaves in an assertive, self-confident manner (cf. Burgoon and Dunbar 2000). By contrast, submissiveness corresponds to a client's reserved, insecure behavior or behavior inhibition. Research suggests that individuals show submissive behavior when they feel anxious and insecure in social interactions (Creed and Funder 1998) or when they see themselves as subordinate (Russel et al. 2011). In an optimal coaching process, clients evolve into the role of a 'co-active, equal partner' (Kaufman and Scoular 2004, p. 288), which corresponds to self-confident interaction behavior rather than to anxious or inhibited interaction behavior. Confident, co-active behavior is interpersonally expressed through dominance rather than submissiveness. Since coaching typically aims to encourage clients and improve their confidence (De Haan et al. 2009), the question then becomes which coach behavior is likely to promote dominant client behavior.

Dissimilar dominance expressions (dominance followed by submission and vice versa) are likely to occur in dyadic interpersonal situations with strong hierarchies, such as physician/therapist–patient dyads or supervisor–subordinate dyads (e.g., Kiesler and Auerbach 2003; Moskowitz et al. 2007; Tracey 2004) or in experimental settings (e.g., Estroff and Nowicki 1992; Nowicki and Manheim 1991). In these settings, dissimilar dominance expressions can yield better performance and more satisfaction by the interacting partner. Subjects in therapeutic settings or in experiments which appear unclear or fake and therefore cause insecurity might expect strong guidance and thus prefer dominance asymmetry. However, unlike clients in therapeutic settings, coaching clients are considered to be rather stable emotionally (Peltier 2010) and to seek a co-active role in the coaching process. When the coaching process is going well, the need for dominance asymmetry should be rather small, resulting in similar rather than opposite dominance behaviors of coach and client. Research further suggests that dissimilar dominance is less likely to occur in close relationships or friendships (Jacobs 2008; Moskowitz et al. 2007). Similarly, we would expect fruitful coach–client relationships to develop on equal terms and to imply a co-active role of the client. Given

these characteristics, we argue that the interpersonal dynamics during coaching processes will resemble friendships more than strong hierarchical relationships.

Taken together, dominance interaction patterns appear to be context- and relationship-specific (cf. Moskowitz et al. 2007). Compared to structured work settings such as physician or therapist–patient dyads, coaching dyads are less hierarchical. Therefore, coaching might benefit from a similar rather than a dissimilar interaction pattern, in terms of matching rather than differing coach and client behavior. To explore which kinds of client behaviors are likely to follow a coach's dominance behavior, the micro-processes of the coach–client interaction need to be examined. In particular, the behavioral acts of coaches and clients must be analyzed in temporal sequence in order to identify the effect of dominant coach behavior on the client's behavior within the interaction process.

When investigating effects of interpersonal dominance, the affiliation dimension must not be neglected (cf. Kiesler and Auerbach 2003; Scholl 2013). The interpersonal circumplex classifies dominance behavior depending on its combination with expressions of affiliation, such as the dominant-friendly, dominant-neutral, and dominant-hostile interpersonal behavior. Although there are four other possible dominance-affiliation combinations (see Table 1), we focus on the impact of variations of dominant coach behavior, as previous findings suggest a relationship between dominant (instead of neutral or submissive) coach behavior and client success (Ianiro et al. 2012).

Dominant-friendly or dominant-neutral interpersonal behavior corresponds to a form of interpersonal influence that is typically accepted by the interacting partner—in contrast to dominant-hostile interpersonal behavior (Scholl 2013). Therefore, we argue that beneficial effects of dominance in the coaching process should only be observable in the absence of hostile expressions, i.e., if the coach behaves in a dominant-friendly or dominant-neutral manner. Moreover, we particularly expect beneficial effects of coaches' dominance when combined with friendliness. Although clients tend to take the role of a 'co-active, equal partner' in the coaching process (Kaufman and Scoular 2004, p. 288), they are likely to appreciate a coach who behaves both in a confident and friendly manner. While dominance expressed by the coach (in the sense of self-confident behavior) may activate the client's hopes and expectations that the coaching will be successful (cf. McKenna and Davis 2009), friendliness expressed by the coach provides a comfortable atmosphere for the client to open up. Dominant-friendly coach behavior can be also referred to as enthusiasm or interest (cf. Larsen and Diener 1992), which encourages the client and evokes in turn dominance rather than submissiveness. As a consequence, the client may react in a confident (i.e., interpersonally dominant) manner as well. By contrast, when a coach shows dominance behavior which is combined with hostility, this may have an intimidating effect on the client (cf. Scheflen 1972) and provoke submissive rather than dominant client behavior (cf. Scholl 2013). Taken together, we hypothesize:

H2 Coaches' dominant-friendly (*H2a*) or dominant-neutral (*H2b*) behavior evokes dominant client behavior within the coaching interaction process. Coaches' dominant-hostile behavior evokes submissive client behavior within the coaching interaction process (*H2c*).

Again, because coaching relationships tend to be only slightly hierarchical and to develop on equal terms (e.g., Kaufman and Scoular 2004), we would expect a similar pattern of coaches' dominance in response to clients' dominance. It is conceivable that confident, enthusiastic and interested client behavior evokes similar coach behavior. Thus, we assume that dominant-friendly or dominant-neutral client behavior triggers dominant-friendly or dominant-neutral coach behavior. However, given the professional role of the coach, we still expect some differences concerning responses to dominant-hostile client behavior. First, we generally expect a weaker effect of clients' dominant behavior on coaches' dominant behavior than vice versa. Because coaches are prepared to expect some negative emotions or resistance to change by their clients, they should not be easily fazed by dominant-hostile client behavior. Even though a coach might feel bothered or surprised by dominant-hostile client behavior, a professional coach should not openly demonstrate this irritation (McKenna and Davis 2009). Taken together, submissive coach reactions to dominant-hostile client behavior are not likely. However, for dominant-friendly or dominant-neutral client behavior within the coaching interaction process, we expect similarly dominant behavioral responses by the coach. Following dominant-friendly or dominant-neutral client behaviors, we expect similar behavioral reciprocity by coaches as in the case of client reactions to dominant coach behavior. Thus, we hypothesize:

H2d Dominant-friendly or dominant-neutral client behavior evokes dominant coach behavior within the coaching interaction process.

Effects of Emergent Interaction Patterns on Coaching Success

In addition to the interplay of distinct interpersonal behaviors of coaches and clients within the coaching interaction process, we aim to explore the effects of these

interpersonal behaviors beyond the interaction setting. In other words, if specific coach behavior influences clients' interpersonal behavior within the coaching process, can we identify effects on the overall coaching outcome as well?

Previous findings based on questionnaire data suggest that dominant client behavior–in terms of self-confident and assertive behavior—is related to goal attainment (Biberacher et al. 2011). Client's goal attainment is a commonly used criterion for evaluating coaching success (Grant 2003, 2006, pp. 156). Moreover, psychotherapy research suggests a link between therapy outcomes and a kind of interpersonal behavior of the patients that corresponds to dominance. Patients' nonverbal expressiveness such as a loud voice or gesticulation during therapy sessions has been linked to the resolution of internally experienced conflicts (for detailed information on nonverbal patterns see Burgoon et al. 1992). In this line, we assume that successful goal attainment (which may include the resolution of conflicts as well) will be linked to specific interpersonal behavior of the client throughout the coaching process. We expect that clients' expression of dominance behavior, rather than submission behavior, is related to goal-focused action. The higher the extent to which a client shows dominant behavior in the coaching session, the more he or she will be actively involved and likely to attain individual goals. This should be reflected in the clients' goal attainment progress and overall goal attainment. Thus, we hypothesize:

H3 The extent to which clients show dominant behavior in the coaching interaction process is positively related to their goal progress (H3a) as well as their overall goal attainment (H3b).

As argued above, we expect that reciprocity in friendliness expressions between coaches and clients will have a positive impact on relationship quality. Concurrently, we assume that dominance of the coach followed by dominance of the client will have a positive impact on coaching success, in terms of clients' goal attainment. Taken together, we expect sequences of dominant-friendly interpersonal behavior to be beneficial for both relationship quality and clients' goal progress as well overall goal attainment. Our final hypothesis thus states:

H4 Reciprocity of dominant-friendly interpersonal behavior is positively related to clients' ratings on relationship quality (*H4a*), clients' goal progress (*H4b*) and clients' overall goal attainment (*H4c*).

Method

We chose to analyze the impact of different combinations of interpersonal affiliation and dominance in coach–client interactions at the beginning of a coaching process, that is, during the first coaching session. Early coach–client interactions are especially important for the coaching process and for coaching success. They advance relationship-building processes and are considered crucial for initiating change in the clients (De Haan 2008a; De Haan et al. 2013; Howard et al. 1986).

Sample

Data were collected at two German universities. The sample included 30 coach–client dyads. All coaches were psychologists (holding a Bachelor degree), evenly divided between the two universities. The majority of the coaches were female (97 %), with an average age of 25.1 years (age range: 21–42 years, $SD = 4.72$). The unequal gender distribution in the sample corresponds to the unequal gender distribution in the population of Psychology students in Germany, where about 77 % of Psychology students are female (Federal Statistical Office 2010). Across the globe, the majority of coaches are female (67.5 %; International Coach Federation ICF 2012). Our sample of coaches was representative for a growing population of young psychologists having a university qualification in coaching or coaching psychology (Grant et al. 2010), entering the coaching market, particularly in the sector of life and career-coaching for pupils (cf. Campbell and Gardner 2005), students or for other young professionals (Parker et al. 2008). In terms of the coaching method (face-to-face), coaches' educational level (at least Bachelor degree), the duration of the coaching process (3–5 months) and the topics addressed in the coaching, our sample of coaches matched 1/3–2/3 of globally practicing coaches. With regard to practicing time (less than 1 year) and age, the sample represented 10–20 % of globally practicing coaches (ICF 2012).

Coaching clients were young professionals or students with a Bachelor degree (education, medicine, and natural sciences) who were close to completing their master degree and who had gained initial working experience (six clients worked already, for example, as project manager, graphic designer, or trainer). Seven of the 30 clients were male (23 %) and 23 clients were female (77 %) with a mean age of 24.9 (age range: 21–32, $SD = 2.82$). The clients sample was representative in terms of gender distribution and the reasons for choosing coaching. The ICF Global Coaching Client Study (2009, based on 2,165 coaching clients from 64 countries) shows that the majority coaching clients are female (global average: 65 %; Germany: 66.7 %; United States: 75.2 %). The top reasons for choosing coaching, according to the ICF (2009), are "Self-esteem/Self-confidence", "Work/Life Balance" and "Career Opportunities (26.8 %). With regard to age, the present client sample was

representative for about 14.4 % of globally coached clients. According to the ICF Global Consumer Awareness Study (2010, 15,000 individuals representing 20 countries), younger coaching clients (25–34 years old) are more aware of professional coaching compared to other age groups and are more likely to considers coaching as viable resource to work on their professional goals.

Procedure

Coaches applied for a two-semester coaching training (specialized course) imbedded in the curriculum of a graduate psychology program at the two German universities, completed with a certificate in career-coaching. They received a standardized and supervised coaching training with a focus on career planning (160 h). Training elements included solution-focused questioning as well as techniques to support the client's self-reflexivity and goal-directed behavior. Training contents were, for example, 'career entry', 'analysis of strengths and weaknesses', insecurity in professional situations, and individual career- and life-planning. The first training semester included modules on coaching-concepts, questioning tools and self-reflection, applied in peer-coaching. In terms of coaching-specific skills and core competencies, the coaches in the present study were comparable to typically certified coaches (e.g., Associate Certified Coach; ICF).

The second training semester comprised client coaching sessions, which were used for data analysis. All coaches received supervision from experienced coaches during the whole training and participated in several expert rounds with coaches, HR-professionals and executives, discussing relevant career-related topics. In general, supervision is highly recommended by coaching federations (e.g., ICF) and considered a quality feature of practicing coaches, independent of coaches' age, experience, or training (e.g., Hay 2007; ICF 2014). Additionally, they received a guideline for structuring the coaching sessions.

Only university members could participate in the coaching program. Clients were recruited via advertisements on university websites and via flyers distributed on campus. The advertisements contained information on the specific offer (five sessions, without charge), examples of career- or study-related issues that would be focal issues during the coaching program (e.g., career-planning, preparation for entering the job market, coping with prospective changes), the target group (i.e., students close to completing their studies), and information on the coaches (i.e., graduate students of Psychology). All clients applied for the program through the university administration.

Coaches and clients were randomly assigned to one another and did not know each other prior to participating in the coaching program. Each client participated in a five-session coaching process, individually scheduled and conducted over a period of 3–4 months. Each coaching session (1–2 h each) was videotaped. All subjects gave their written consent for the video analysis and scientific use of their data. Research assistants prepared the coaching room for data collection, but were absent during the coaching session. For the present study, the first coaching session served as the basis of analysis.

Measures

Interpersonal Behavior

We assessed coaches' and clients' interaction behavior during the first coaching session with the Discussion Coding System (DCS, Schermuly and Scholl 2012). In the present study, the DCS was used to assess the interpersonal meaning of the coach and client interaction behavior, with a focus on nonverbal behavior. The DCS offers a behavior- and an adjective-based operationalization of the interpersonal dimensions to ensure high accuracy and reliability of the ratings. The adjectives are taken from the interpersonal adjective list (IAL, Jacobs and Scholl 2005), which characterizes dominance in terms of being assertive, self-assured, direct, or proud. Submissiveness is described by the following adjectives: shy, unassertive, hesitant, subservient, or influenceable. Hostility can be expressed by being ruthless, indifferent, vicious, devious, or merciless. Finally, friendliness is described in terms of being empathetic, hearty, considerate, generous, or intent on harmony (Schermuly and Scholl 2012).

Four female raters (psychologists with Bachelor degree) completed one workshop and several training units on the Discussion Coding System in the course of 5 weeks. They coded the interpersonal behavior of $N = 30$ coach–client dyads. In the coding process, they first identified a unit (act) on the basis of a set of hierarchical rules (see Table 2). Then, every unit was coded with regard to the degree of dominance and affiliation expressed in the observed interpersonal behavior. Inter-rater reliability was calculated on the basis of three double-rated videos, from which two were rated by all four raters. This corresponds approximately to the usual percentage of 10 % of double-rated videos used in DCS-validation studies to calculate inter-rater reliability (e.g., Schröder et al. 2013; Schermuly and Scholl 2012). A two-way consistency intraclass correlation coefficient (Shrout and Fleiss 1979) for pairwise raters yielded values of at least ICC = .69 ($p < .01$) for the affiliation dimension, and ICC = .58 ($p < .01$) for the dominance dimension (see Table 3).

Table 2 DCS coding rules for the subdivision of the interaction process following

A new act has to be coded if:	Examples
1. The speaker changes	1. Change of speech between coach and client
2. The speaker addresses a statement to another person	*2. Only applied if the conversation includes more than two interactants*
3. The speaker changes from one main category to another, i.e., changes between a content act, socio-emotional act (interactant's feelings or feelings toward interacting partners), or regulation act (statements to regulate the course of the interaction process)	3a. Client first talks about work load (content), then adds how he/she feels (socio-emotional); 3b. Coach first describes the general coaching procedure (content), then concludes with'let's start with the first coaching goal' (regulation)
4. The speaker states a new question or a new proposal	4. The coach proposes to the client to write down the main coaching goals
5. The speaker speaks for longer than 30 s	5. The client describes his/her private situation, speaking several minutes
6. The speaker stays in the same functional domain, but the main argument explicitly changes	6. First, the client describes a private situation, then speaks about a job-related issue (both content acts, different topics) *Only applied, if rules 1–5 cannot be applied*
7. The speaker does not only give a short agreement (e.g., yes) or rejection (e.g., no), but additional information (see reactions)	7. The client says "Yes, that's true. I think, I first became aware of this, when I openly talked with my colleague"

Coding rules according to DCS specifications (Schermuly and Scholl 2012)

Relationship Quality

Recent empirical studies addressing relationship quality in coaching (e.g., Baron and Morin 2009; Wasylyshyn 2003), suggest the construct working alliance to assess the client's perceptions of the coach–client relationship. The construct working alliance derives from psychotherapy research (Horvath and Greenberg 1989; Horvath and Luborsky 1993; Horvath and Symonds 1991). In coaching, a working alliance characterizes an affective bond with a strong focus on tasks and goals (Latham and Heslin 2003; McKenna and Davis 2009). To measure working alliance, we used a German short version of the widely used Working Alliance Inventory (WAI, Horvath and Greenberg 1989). The 12 items of the short-version were based on the factor structure of the WAI (Tracey and Kokotovic 1989), translated and adapted to the coaching-context. The items were: "I believe that my coach likes me"; "My coach and I have built a mutual trust"; "We have a good understanding of the kind of changes that would be good for me"; and "We are working toward mutually agreed upon goals". These items were rated on a scale ranging from 1 (strongly disagree) to 6 (strongly agree), with an observed average value of $M = 5.49$ ($SD = 0.40$; Cronbach's $\alpha = .71$).

Table 3 Inter-rater reliability

ICC	Rater 2		Rater 3		Rater 4	
	A	D	A	D	D	A
Rater 1	.79[a]	.77[a]	.76	.67	.58	.69
Rater 2			.79	.67	.62	.70
Rater 3					.69	.76

For affiliation and dominance, the unadjusted ICC was calculated. ICC based on $N = 511$ interaction units

A affiliation dimension, *D* dominance dimension

[a] ICC based on $N = 765$ interaction units

Goal-Attainment Progress and Overall Goal-Attainment

To measure goal attainment, coaches asked their clients to identify up to three individual goals in their first coaching session. Coaches first asked their clients for target states as well as their expectations with regard to the coaching. Being well trained in goal operationalization, coaches then supported their clients to develop SMART goals for the coaching process (specific, measurable, attractive, realistic, and time-bound goals). Coaches did not proceed with other exercises without having clarified relevant and concrete coaching goals. Typical goals were 'gaining more self-confidence', 'identification of strengths and weaknesses' or 'developing a professional perspective'. At the beginning of each coaching session, coaches asked their clients to rate the present degree of success in attaining their goals, using a process evaluation scale ranging from 1 (goal is not achieved at all) to 10 (goal is fully achieved). We then calculated average values of goal attainment ratings across all defined goals for each client, respectively, for the first and fifth coaching session. The client's success in attaining his or her individual goals can be understood both in terms of the goal progress and the overall goal attainment, as there are at least two possible ways for the client to succeed. First, the client may have a high progress in goal attainment from the first to the last coaching session (high goal progress), but may be still far away from the ultimate goal (small overall goal attainment). Second, the client can start the coaching being only slightly away from the ultimate goal and therefore change only slightly during process (small goal progress, high overall goal attainment). In order to address these possible variations of success, we applied both measures of coaching success in the present

study. To measure goal progress, we calculated the difference between each client's average ratings at the beginning of the fifth (final) coaching session and the average ratings in his or her the first coaching session. For overall goal attainment, we used the average values of the fifth session.

Sequential Analysis of Nonverbal Interpersonal Behavior

When aiming to examine interdependencies between behaviors from different interactants, such as coaches and their clients, the interaction needs to be separated into separate behavioral events that occur in temporal order. The first step for analyzing such an interaction stream is to identify distinct behavioral units (e.g., Meinecke and Lehmann-Willenbrock 2014; see also Krippendorff 2004, for an overview on unitizing techniques). Different interaction coding systems apply different unitizing rules that depend on the scope of analysis and on the specific research question. We used the Discussion Coding System (Schermuly and Scholl 2012) that cuts the interaction stream into individual behavioral units on the basis of seven sequencing rules (see Table 2). Upon dividing the interaction stream into distinct units, it is possible to analyze how one interacting partner responds to the other. Behavioral observations via video analysis, as used in the present study, allow an analysis not only of the explicit verbal, but also and particularly of nonverbal behaviors expressed over time. When using the Discussion Coding System, parallel information on interpersonal dominance and affiliation within a single behavioral unit can be categorized simultaneously.

Lag sequential analysis can examine interdependencies between behaviors at the micro-level of interactions over time. As such, it preserves the temporal data structure that is inherent in any interaction process, rather than aggregating or collapsing behaviors into overall frequencies. Sequential or time-series data are nonindependent by nature, as observed behaviors are usually influenced by other recently observed behaviors (for an excellent discussion of the challenges of analyzing sequential behavioral processes, see Chiu and Khoo 2005). We chose to use lag sequential analysis specifically because it assumes that a specific behavior at any given time in an interaction process is probabilistically determined by preceding behaviors. Lag sequential analysis views sequential phenomena, such as behaviors of interacting coaches and their clients, as discrete Markov processes that can take on any one of a finite number of predefined states, or in our case, specific nonverbal expressions. Within this process, the current state or behavior determines the probability of specific subsequent behaviors. We applied lag sequential analysis as implemented in INTERACT software (Mangold 2010) to examine how often a specific behavior shown by a coach was followed by specific behaviors by the client, and vice versa. Beyond more traditional conditional probabilities, lag sequential analysis can test significant differences in probabilities by comparing the extent to which the conditional probability of a following behavior, given a preceding behavior, differs from the unconditional probability of the following behavior (z scores; see Bakeman and Quera 1995).

On average, the coaching sessions in our sample contained 370 interaction units (179–635; $SD = 125.15$). In order to obtain meaningful and interpretable results, we pooled our data and performed a sequential analysis on the total of 11,095 interaction units (interaction units of all 30 coach–client dyads in the first coaching session; see Bakeman and Gottman 1986 for a formula to calculate minimum data point requirements for lag sequential analysis). Upon unitizing and coding the interaction data, we generated sequence matrices (i.e., crossover frequencies of behaviors following one another across time). These matrices were based on the category "actor" (coach or client) and the observational categories (intensity of affiliation or dominance). The intensity of the affiliation expressed in each nonverbal behavior was rated on a range from 1 ("extremely hostile") to 5 ("extremely friendly"). Likewise, extreme submissiveness received a rating of 1, whereas extreme dominance received a rating of 5. To simplify the sequential analysis, we separated this five-point ranged scale into the following: :"friendliness" (ratings 4 or 5), "neutrality" (rating 3), and "hostility" (ratings 1 or 2) for the affiliation dimension, and "dominance" (ratings 4 or 5), "neutrality" (rating: 3) or "submissiveness" (ratings: 1 or 2) for the dominance dimension.

We generated sequence matrices of one interaction unit following another interaction unit. Depending on the hypothesis to be tested, the interaction units included actor differentiation (coach or client) and differentiation of one (e.g., affiliation only) or both dimension ratings. Within these matrices, the frequencies of one interaction following another were computed as cell frequencies. By dividing the cell frequencies by the cell sums, transition probabilities were calculated (Benes et al. 1995). These conditional transition probabilities indicate the probability of one interaction unit to occur given a specific preceding interaction unit (e.g., the probability of a dominant interaction unit of the client given a specific interaction behavior of the coach in the preceding interaction unit). However, these conditional transition probabilities are confounded with the base rates of the following event (e.g., overall probability of the dominant interaction units of clients in the sample). Thus, a high transition probability alone does not

necessarily indicate a non-random transition frequency of the following unit. Further statistical analysis is needed to determine the significance of the calculated transition probability (Bakeman and Gottman 1986). On the basis of the calculated probabilities the INTERACT software computes z values. Significant z values (>1.96 or <−1.96 for two-tailed hypothesis testing) indicate that one specific interaction unit is significantly often followed by another specific interaction unit (e.g., a friendly interaction unit of the coach is significantly often followed by a friendly interaction unit of the client; see Bakeman and Quera 2011).

Results

We first examined our data for any potential differences between the two different university locations. T-tests comparing the means of coaches' and clients' observed interpersonal behaviors, clients' goal attainment scores, and clients' ratings of the relationship quality did not yield any significant differences between the two locations. We also examined potential gender differences. Dominance expressions by male ($M = 3.02$) and by female coaches ($M = 3.36$) were comparable. The average affiliation of the male coach ($M = 3.07$) approximately corresponded to the minimum value of female affiliation ($N = 29$, $M = 3.36$, Range = 3.10–3.72; $SD = .18$). The average observed dominance of male clients ($N = 7$; $M = 3.35$, Range = 2.33–3.85; $SD = .56$) was about one standard deviation higher than the average dominance of female clients ($N = 23$, $M = 2.99$, Range = 1.69–3.94; $SD = .53$). The average affiliation of male clients ($N = 7$; $M = 3.26$, Range = 3.08–3.54; $SD = .16$) differed only slightly from the average affiliation of female clients ($N = 23$, $M = 3.38$, Range = 3.14–3.80; $SD = .16$). Post-hoc χ^2 tests showed that there were no significant gender differences in clients' dominance ($\chi^2 = .65$, $p = .72$, n.s.) or affiliation ($\chi^2 = .04$, $p = .85$).

Frequencies of Coaches' and Clients' Interpersonal Behavior

Table 4 shows the percentage of observed interpersonal behavior combinations (degree of dominance and affiliation) of coaches and clients, the percentage of reciprocal friendliness, and the percentage of reciprocal dominant-friendly interpersonal behavior. Frequencies of interpersonal behavior combinations were related to the total number of interaction units (acts) per actor. Frequencies of reciprocal interpersonal behaviors were related to the total number of interaction units of both actors within the coaching session.

Table 4 Means and standard deviations of observed interpersonal behaviors by coaches and clients

Interpersonal behavior	Percentage of coaches' overall interaction units		Percentage of clients' overall interaction units	
	M	SD	M	SD
Submissive behavior	7.38	9.90	23.02	27.14
Submissive				
Hostile	0.02	0.10	0.00	0.00
Neutral	5.05	6.52	16.89	19.19
Friendly	2.31	3.91	6.13	9.50
Neutral behavior	52.57	17.99	46.20	19.51
Neutral				
Hostile	0.06	0.18	0.16	0.42
Neutral	36.71	15.47	31.57	15.84
Friendly	15.79	9.66	14.47	9.65
Dominant behavior	40.05	20.29	32.07	23.55
Dominant				
Hostile	0.11	0.64	0.14	0.53
Neutral	25.35	14.18	19.69	16.87
Friendly	14.59	14.12	10. 95	11.69

$N_{dyad} = 30$, $N_{seq} = 11{,}095$

The majority of expressed interpersonal behaviors of coaches and clients were neutral, i.e., containing neither pronounced friendliness nor hostility, nor a striking degree of dominance or submissiveness ($M_{coaches} = 36.71$ %, $SD_{coaches} = 15.47$; $M_{clients} = 31.57$ %, $SD_{clients} = 15.84$). Submissive-hostile behavior was rare for both coaches and clients ($M_{coaches} = 0.02$ %, $SD_{coaches} = 0.10$; $M_{clients} = 0.00$ %, $SD_{clients} = 0.00$). The percentage of reciprocal friendly interaction units of all interaction units in the first coaching session ranged from 0.40 to 26.57 % ($M = 14.24$ %, $SD = 7.04$); the percentage reciprocal dominant-friendly interaction units ranged from 0.00 to 26.70 % ($M = 7.43$ %, $SD = 5.73$)

Dynamics of Interpersonal Affiliation

Hypothesis 1a predicted that affiliative coach behavior would promote similarly affiliative client behavior. Analogously, Hypothesis 1b predicted that affiliative client behavior would promote similarly affiliative coach behavior. Table 5 shows the z values for different coach behaviors and the following client behaviors at lag1 (the following interaction unit). Table 6 shows the z values for different client behaviors and the following coach behaviors at lag 1. Positive z values (>1.96) revealed behavior that followed significantly often, whereas negative z values (< − 1.96) indicated behavior that followed significantly rarely after a specific coach behavior (Table 5) or after a specific client behavior (Table 6).

Table 5 *Z* values of conditional probabilities of coach behavior and following client behavior at lag1

Variable	Following client behavior at lag 1		
	Hostile	Neutral	Friendly
Affiliation of preceding coach behavior			
Hostile	0.00	0.38	−0.47
Neutral	0.00	13.17**	−3.98**
Friendly	0.00	−5.36**	11.13**
Variable	Following client behavior at lag 1		
	Submissive	Neutral	Dominant
Dominance of preceding coach behavior			
Submissive	3.94**	2.41**	−2.14*
Neutral	2.92*	9.96**	−3.42**
Dominant	3.85*	0.31	3.82**

$N_{dyad} = 30$. $N_{seq} = 11{,}095$

* $p < .05$; ** $p < .01$ (two-tailed)

The results show that nonverbal expressions of friendliness by a coach significantly increased the likelihood of subsequent friendly client behavior ($z = 11.13, p < .01$). On the other hand, the probability that preceding friendliness of the coach was being followed by neutral affiliation behavior of the client was significantly small ($z = -5.36$, $p < .01$). The converse pattern was found for preceding neutral coach behavior (Table 5). No significant patterns were found for preceding hostility of the coach. These findings partially support H1a. Very similar results were found for preceding client affiliation behavior and the following coaches'affiliation behavior: friendliness of the client was significantly often followed by friendly coach behavior ($z = 9.88$, $p < .01$, see Table 6), neutrality of the client was significantly often followed by neutral coach behavior ($z = 12.02$, $p < .01$) and no significant results were found for preceding clients' hostility. These findings support H1b.

Table 6 *Z* values of conditional probabilities of client behavior and following coach behavior at lag1

Variable	Following coach behavior at lag 1		
	Hostile	Neutral	Friendly
Affiliation of preceding client behavior			
Hostile	0.00	0.28	1.40
Neutral	0.00	12.02**	−4.08**
Friendly	0.00	−2.14*	9.88**
Variable	Following coach behavior at lag 1		
	Submissive	Neutral	Dominant
Dominance of preceding client behavior			
Submissive	3.37**	5.97**	3.02**
Neutral	3.11*	8.87**	−1.00
Dominant	−2.15*	−2.04*	3.18**

$N_{dyad} = 30$. $N_{seq} = 11{,}095$

* $p < .05$. ** $p < .01$ (two-tailed)

Influence of Affiliation Reciprocity on Working Alliance

Hypothesis 1c predicted that the extent to which reciprocity of affiliation in terms of friendliness occurs in the coaching interaction process is positively related to relationship quality. Relationship quality was assessed on the basis of clients' ratings on working alliance. Ratings on working alliance ranged from 4.58 to 6.00 ($M = 5.50$, $SD = 0.41$). The percentage of reciprocal friendly interaction units of coach and client shown in the first coaching session was positively and significantly related to working alliance after the fifth and final coaching session ($r = .33$, $p < .05$; Table 9), which supports H1c.

Dynamics of Interpersonal Dominance

Hypothesis 2a posited that dominant-friendly coach behavior would promote dominant client behavior. First, we examined behavioral sequences on the dominance-submissiveness dimension (regardless of combinations with affiliation). Table 5 presents *z* values of the interaction sequences of dominance behavior. The results show that submissive or neutral coach behavior was significantly often followed by submissive or neutral client behavior, and significantly infrequently followed by dominant client behavior ($z = -2.14$ and $z = -3.4$). When we only looked at the dominance dimension, we found that dominant coach behavior was significantly often followed by either dominant client behavior ($z = 3.82$) or submissive client behavior ($z = 3.85$). Therefore, without simultaneously considering expressions of affiliation, it is not possible to discern whether dominant coach behavior will elicit dominant or submissive client behavior. However, *z* values in Table 7 show different results if the coaches' interaction units include ratings on dominance *and* affiliation: dominant-friendly behavior of the coach was significantly often followed by dominant client behavior ($z = 5.23$, see Table 7). Furthermore, results in Table 7 reveal that dominant-friendly behavior was the only interpersonal behavior shown by coaches that was significantly often followed by dominant client behavior, supporting H2a. On the other hand, dominant-neutral coach behavior was significantly often followed by submissive rather than dominant client behavior. And finally, dominant-hostile coach behavior was followed by submissive client behavior, although this sequence was not significant ($z = 1.81$, $p = .078$; Table 7). Thus, we rejected H2b and H2c.

Table 7 *Z* values of conditional probabilities of coaches' interpersonal behaviors and clients' subsequent dominance behavior at lag1

Coaches' preceding interpersonal behavior	Clients' following dominance behavior at lag1		
	Submissive	Neutral	Dominant
Submissive			
Hostile	3.18**	−0.50	−0.44
Neutral	3.75**	0.89	−1.13
Friendly	1.18	2.97**	−2.07**
Neutral			
Hostile	3.49**	−0.87	−0.76
Neutral	5.40**	7.77**	−1.72
Friendly	−3.35**	4.96**	−3.03**
Dominant			
Hostile	1.81	−1.32	−1.15
Neutral	5.01**	0.32	0.55
Friendly	−0.67	0.19	5.23**

$N_{dyad} = 30$. $N_{seq} = 11{,}095$

* $p < .05$; ** $p < .01$ (two-tailed)

Table 8 *Z* values of conditional probabilities of clients' interpersonal behaviors and coaches' subsequent dominance behavior at lag1

Clients' preceding interpersonal behavior	Coaches' following dominance behavior at lag 1 (without affiliation differentiation)		
	Submissive	Neutral	Dominant
Submissive			
Hostile	0.00	0.00	0.00
Neutral	2.37*	5.10**	1.48
Friendly	2.50*	2.89**	3.30**
Neutral			
Hostile	−0.65	2.86**	−0.92
Neutral	2.98**	6.98**	−0.46
Friendly	0.98	4.42**	−0.91
Dominant			
Hostile	−0.65	0.07	0.61
Neutral	−2.06**	0.10	0.15
Friendly	−0.61	−3.41**	4.81**

$N_{dyad} = 30$. $N_{seq} = 11{,}095$

* $p < .05$; ** $p < .01$ (two-tailed)

With regard to clients' dominance influencing the coach, the results as presented in Table 6 show that submissive client behavior was significantly often followed by submissive ($z = 3.37$), neutral ($z = 5.97$), or dominant coach behavior ($z = 3.02$). Hypothesis 2d posited that dominant-friendly or dominant-neutral client behavior evokes dominant coach behavior The results show that dominant client behavior was significantly often followed by dominant coach behavior ($z = 3.18$), and significantly infrequently followed by submissive ($z = -2.15$) or neutral ($z = -2.04$) coach behavior. Including the affiliation dimension, results in Table 8 show that dominant-friendly client behavior was significantly often followed by dominant coach behavior ($z = 4.81$), and dominant-neutral client behavior was significantly infrequently followed by submissive coach behavior. However, no significant results were found for dominant coach behavior following preceding dominant-neutral or dominant-hostile client behavior. Thus, Hypothesis 2d was only partially supported.

In addition to testing reciprocal behavioral sequences, we explored in our data whether this reciprocity would change over the course of the observed coaching sessions. The results of this ancillary analysis suggest that reciprocity of friendliness slightly increased from the first 15 min of the session (t1) to the second interval t2 ($M_{t1} = 5.93$, $SD = 4.21$; $M_{t2} = 6.30$, $SD = 5.98$). However, this difference was not significant. Moreover, we found that reciprocity in the first and second interval was highly correlated ($r = .65$, $p < 001$). We obtained similar results for reciprocity of dominance ($M_{t1} = 5.33$, $SD = 6.56$; $M_{t2} = 5.47$, $SD = 6.22$). The number of sequences of dominant-friendly reciprocity within the two 15-min intervals was too small to analyze meaningful changes.

Influence of Clients' Dominance on Goal Attainment

Hypothesis 3 stated that the amount of dominant client behavior was positively related to (a) goal progress and (b) overall goal attainment of the client. Goal attainment progress ranged from .50 to 7.67 ($M = 3.37$, $SD = 1.44$); overall goal attainment ranged from 3.0 to 10.0 ($M = 7.73$, $SD = 1.53$). Mean goal attainment ratings increased with each coaching session (Table 9). Correlations of the respective variables are presented in Table 9. The percentage of dominant client behavior was positively, but not significantly related to goal progress ($r = .30$, $p = .059$), which rejects H3a.

Lending support to hypothesis 3b, however, the percentage of dominant client behavior shown in the first coaching session was positively and significantly related to overall goal attainment after the fifth and final coaching session. Moreover, dominant client behavior was positively and significantly related to clients' goal attainment ratings after the second ($r = .54$, $p < .01$), third ($r = .45$, $p < .01$), and fourth ($r = .46$, $p < .01$) coaching session; Table 9. The results presented in Table 9 further show that neutral client behavior was statistically unrelated to goal attainment measures (goal progress: $r = .01$, $p = .478$; overall goal attainment: $r = .12$, $p = .270$) and that submissive client behavior was significantly and negatively

Table 9 Pearson's correlations between interpersonal behavior patterns (reciprocity), client's interpersonal behavior and coaching outcomes

Variable		Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Reciprocity[a]	(1) Friendliness	14.24 % (7.04)	–										
Reciprocity[a]	(2) Dominance and friendliness	7.43 % (5.73)	.07	–									
Client behavior[b]	(3) Submissive	23.02 (27.14)	−.24	−.64**	–								
	(4) Neutral	46.20 (19.51)	.02	.52**	−.50**	–							
	(5) Dominant	32.07 (23.55)	.25	.30	−.72**	−.25	–						
Goal attainment (N_a)	(6) Post 1	4.44 (1.32)	.13	.23	−.28	.13	.22	–					
	(7) Post 2	4.88 (1.34)	.23	.07	−.31	−.24	.54**	.52**	–				
	(8) Post 3	6.00 (1.59)	.05	.41*	−.48**	.12	.45**	.53**	.80**	–			
	(9) Post 4	7.03 (1.68)	.12	.51**	−.47**	.09	.46**	.51**	.69**	.86**	–		
	(10) Post 5	7.73 (1.53)	.12	.46**	−.49**	.12	.46**	.48**	.62**	.83**	.91**	–	
	(11) Progress[c]	3.37 (1.44)	.02	.29	−.27	.01	.30	−.36*	.22	.42*	.52**.	.65**	–
Working alliance (N_b)	(12) Post 5	5.49 (0.40)	.33*	.06	−.16	.05	.14	.27	.38*	.41*	.40*	.31	.09

Post 1–5 = time of measurement after each corresponding coaching session

$N = 30$. $N_a = 29$. $N_b = 28$. * $p < .05$; ** $p < .01$ (one-tailed)

[a] Percentage of overall number of interaction units

[b] Percentage of clients' overall number of interaction units

[c] Goal progress from first to fifth session

related to overall goal attainment ($r = -46$, $p < .01$). Moreover, submissive client behavior was significantly and negatively related to clients' goal attainment after the third ($r = -.48$, $p < .01$), fourth ($r = -.47$, $p < .01$) and fifth ($r = -.49$, $p < .01$) coaching session, respectively. These findings further support H3b.

Influence of Dominant-Friendly Reciprocity on Working Alliance and Goal Attainment

Hypothesis 4 predicted that the extent to which reciprocity of dominant-friendly interpersonal behavior occurs within the coaching interaction process is positively related to (H4a) relationship quality as well as (H4b) goal progress and (H4c) overall goal attainment. Table 9 shows that the percentage of reciprocal dominant-friendly interaction units and relationship quality in terms of working alliance was statistically unrelated ($r = .06$, n. s.), thus rejecting H4a. The percentage of reciprocal dominant-friendly interaction units was positively, but not significantly related to goal progress ($r = .29$; $p = .067$), thus rejecting H4b. However, as hypothesized, the percentage of reciprocal dominant-friendly interaction units was positively and significantly related to clients' overall goal attainment ($r = .46$; $p < .01$). This result supports H4c.

Discussion

Coaching is a structured process in which coaches support their clients to attain individually set goals (Grant 2005). The success of this process largely depends on the interaction between coaches and their clients. This study took first steps to explore these interaction dynamics, with a particular focus on nonverbal behavior within the coaching interaction process. Based on the basic interpersonal dimensions dominance and affiliation, we examined how coaches and their clients influence each other over the course of their coaching interaction process. Using lag sequential analysis, we identified emergent patterns of interpersonal behavior that were linked to the working alliance as well as goal attainment as perceived by the clients at the end of the coaching process.

Based on interpersonal theories (e.g., Kiesler 1996) and empirical studies on nonverbal assimilation or emotional contagion (e.g., Barsade 2002), we assumed that the coach's affiliation behavior would evoke similar affiliation behavior of the client. Indeed, we found that expressions of interpersonal friendliness by coaches triggered similar interpersonal friendliness by clients, whereas neutral (neither friendly nor hostile) affiliation expressed by coaches elicited neutral affiliative expressions by the client. Likewise, clients' friendliness or neutrality evoked similar coach affiliation behavior. Contrary to our expectations, we did not find significant patterns of hostile client behavior following hostile coach behavior and vice versa. However, this result may be due to the extremely low percentage of observed hostile behavior overall (on average, 0.2 % by coaches and 0.0 % by clients per observed session).

As hypothesized, dominant coach behavior was followed by similarly dominant client behavior only when combined with friendliness. By contrast, dominant-neutral or—by trend—dominant-hostile interpersonal behavior by coaches promoted submissive rather than dominant client behaviors within the coaching interaction process. For the opposite direction, i.e., clients' influencing coaches, dominance interaction patterns appeared to be somewhat less straightforward. As predicted, clients' expressions of dominance as well as their dominant-friendly interpersonal behavior evoked dominant coach behavior. Moreover, unlike their clients, coaches reacted significantly infrequently with submissiveness after dominant-neutral client behavior. However, contrary to our expectations, the observed sequence of dominant coach behavior following dominant-neutral or dominant-hostile client behavior was not above chance.

Concerning the effects of interpersonal patterns on coaching outcomes, we found that the extent to which clients showed dominant interaction behavior was positively related to their overall goal attainment upon completing the coaching process, as predicted. Moreover, clients' overall goal attainment was higher the more often dominant-friendly interaction behavior was reciprocated. Against our expectations, reciprocity of dominant-friendly interpersonal behavior was not related to clients' ratings on working alliance. In line with our expectations, however, reciprocity of expressed friendliness significantly improved the reported working alliance. Even though the working alliance inventory items address mutual trust and liking as well as the quality of goal-related behavior, reciprocal friendliness in the first coaching session appears to be more relevant for clients' ratings on working alliance after the last coaching session than reciprocal dominance. We noticed that our scale average for working alliance quality was rather high across all coach–client dyads. However, previous research on clients' perceptions on the working alliance in coaching finds similarly high averages (e.g., Baron and Morin 2009).

Theoretical Implications

Our findings have several theoretical implications. First, our results highlight the important role of interpersonal behavior for coaching processes and outcomes. Concerning the question of whether interpersonal dominance triggers similar or dissimilar behavior by the interacting partner (e.g., Dryer and Horowitz 1997; Jacobs 2008), our findings

offer support for both possibilities. In line with the dissimilarity hypothesis (e.g., Kiesler 1996), dominant-neutral or dominant-hostile interpersonal behavior by coaches evoked dissimilar behavior by clients (i.e., submissive client behavior). In contrast, dominant-friendly interpersonal behavior by coaches or clients invited similarly dominant behavior of the respective interacting partner, which is in line with findings on interpersonal similarity in close relationships (e.g., Jacobs 2008). Our findings also support the assumption that dominance interaction patterns are context-, role-, and relation-specific, which can explain why some studies report that interpersonal dominance evokes similar behavior, while others report that interpersonal dominance invites the interacting partner to opposite dominance response behavior (e.g., Jacobs 2008; Moskowitz et al. 2007).

Second, our findings on reciprocal friendliness in coaching align with previous research on the importance of nonverbal interpersonal behavior in social relations (e.g., Guerrero and Floyd 2006; Burgoon et al. 2010). The friendly and neutral coach–client interaction sequences identified in this study correspond to previous research on interpersonal similarity and complementarity (e.g., Dryer and Horowitz 1997) as well as previous findings on mimicry or emotional contagion in social interactions (e.g., Barsade 2002; Hatfield et al. 1994). Moreover, as friendliness is considered to support the formation of an affective bond (cf. Burgoon et al. 2010), our findings provide hints concerning how a positive coaching relationship can be formed. Reciprocal friendliness expressions may contribute to a positive atmosphere as well as relationship quality, in terms of the perceived working alliance. In the context of team collaboration, such positive emotional contagion processes have been linked to the creation of a positive group mood (Lehmann-Willenbrock et al. 2011). In coaching, an atmosphere marked by reciprocal friendliness and positive affect may convey security and help the client open up (Greif 2007).

Third, our findings suggest that coaches' and clients' interpersonal behavior may be important factors for promoting coaching success. Similar to previous findings relating patients' nonverbal dominance to therapy success (e.g., Burgoon et al. 1992), clients' interpersonal dominance behavior in our study was linked to coaching success in terms of clients' goal attainment. Among the correlations between clients' dominance and goal attainment, we found the strongest link between clients' dominance behavior in the first session and goal attainment ratings after the second coaching session. As coaching goals are set in the first session, ratings of the second session may directly result from interactions of the first coaching session. Moreover, our results suggest that only dominant-*friendly* interpersonal behavior by coaches can contribute to coaching success, by triggering clients' dominance. This finding aligns with research showing that coaches need to be dominant to some extent, in the sense of showing assertive and confident behavior, in order to demonstrate competence, to provide security and eventually to promote the client's coaching success (Bonaccio and Dalal 2006; De Haan 2008a). Beyond these previous studies, we show how the impact of dominance behavior depends on combinations of dominance with different expressions of affiliation (cf. Scholl 2013). Moreover, as clients tended to reciprocate coaches' dominant-friendly interpersonal behavior, sequences of reciprocal dominance-friendliness could be observed. The frequency of such sequences in the coach–client interactions was also related to clients' ratings of goal attainment from the third session onward, which further suggests that coaches as well as clients need to express confidence and should have co-active roles in the coaching process in order to successfully work together on the client's goal (cf. Kaufman and Scoular 2004).

Practical Implications

For coaches, our study implies that interpersonal behavior is an important factor for promoting coaching success. A high awareness of their own and their clients' interpersonal signals can help coaches activate their clients' confidence and assertiveness (via dominant-friendly interpersonal behavior). Moreover, our finding that client behavior also influences the coaches—particularly with regard to the affiliation dimension—can help coaches to understand interpersonal dynamics as well as their own intuitive reactions within the coaching process. To promote the benefit of appropriate interpersonal behavior, insights into the nonverbal behavioral dynamics during coaching sessions could be integrated into coaching education curricula. Specifically, coaches should obtain knowledge of and skills for expressing dominant-friendly interpersonal behavior. Interpersonal dominance and affiliation behavior can be trained on the basis of specific behavioral anchors (see Schermuly and Scholl 2012). However, working on one's interpersonal behavior should not lead to inauthentic or fake coach behavior, but rather implies a careful examination of one's nonverbal habits. This may lead to a higher awareness and small modification of one's (nonverbal) interpersonal behavior. As an example, our finding that not only dominant-hostile but also dominant-neutral coach behavior was likely to promote the client's submissiveness could provide a starting point for coaches to understand and work on difficult interactions in coaching, such as a client's retreat. Moreover, coaches may benefit from acquiring a certain level of routine in expressing dominant-friendly interpersonal behavior—regardless of the interpersonal behavior of the client, even if coaches are confronted with hostile client behavior. For example, this could be the case when clients do not enter the coaching voluntarily, but are urged to participate by their supervisor. Under such conditions, coaches can express dominant-friendly interpersonal behavior to demonstrate that they

are in control of the situation, and at the same time promote a positive coach–client relationship.

Limitations and Future Directions

To the best of our knowledge, this is the first study exploring the micro-processes of coach–client interactions. However, our study has several limitations. First, the coaches in our sample do not necessarily represent the large variety of professional coaches in the field (e.g., in terms of gender, age, experience, cultural background, and coaching approach). As our sample included predominantly female coaches and clients, the data did not allow for analyzing gender effects, although previous research suggests gender differences in interpersonal dissimilarity (Ansell et al. 2008). As the dominance and affiliation values of the male coach did not differ substantially from female coach values, we did not exclude the corresponding dyad from our analysis. However, future research should clarify whether the present results also apply for mixed-gender or same-gender dyads with male coaches. Concerning the clients, our findings suggest that the expressed dominance by male clients was slightly higher compared to female clients. However, within the eight mixed-gender dyads (predominantly female coach and male client), mean differences of dominance and affiliation between coaches and clients differed only slightly from same-gender dyads. In any case, although a homogeneous sample in terms of education and coaching approach was beneficial for the internal validity of our study, our findings need to be replicated in different coach–client populations.

Second, a larger and more heterogeneous sample may also provide further insights into the potential impact of hostile interpersonal behavior in coaching. Unlike friendly or neutral coach behavior, hostile coach behavior hardly occurred in our sample. Although we would not expect hostile coach behavior to occur particularly frequently, critical moments in a coaching session can be demanding for a coach (cf. De Haan 2008b) and may provoke moderate forms of interpersonally hostile behavior, such as looking or unconsciously turning away. These nonverbal clues from the coach might be triggered by difficult client behavior, such as retreat, passivity, or rambling answers, which the coach might perceive as hostile (refusing) acts in the first place. In line with findings from team interaction research (e.g., Barsade 2002; Lehmann-Willenbrock and Kauffeld 2010), such negative behavioral linkages could have a negative impact on the coaching interaction process and outcome. Future research can pursue this idea.

Third, lag sequential analysis which we employed in order to identify emergent interaction patterns between coaches and clients has some limitations. Sequential analysis does not account for non-stationarity, in terms of differences in effects over time, or for sampling unit heterogeneity, except through parallel analyses of subsamples of the data (for a detailed criticism of sequential analysis, see Chiu and Khoo 2005). Although sequential analysis allowed us to gain important insights into the behavioral dynamics of coaches and their clients and the link of these dynamics to coaching outcomes, future research with larger samples should address some of these limitations.

Fourth, we focused on emergent interpersonal patterns at the behavioral level, but did not explore potential explanatory variables at other levels, such as personality traits at the individual level, that might impact these behavioral expressions. Lab experimental studies suggest links between situational power on the one hand and dispositional dominance orientation and micro-level dominance behavior on the other hand (Dunbar and Abra 2010; Georgesen and Harris 2000). Future research should examine the interplay of individual traits and interpersonal dynamics in coach–client interactions. For example, future research could clarify whether a dominant-friendly coach can trigger dominant client behavior only when that client scores high on trait dominance or whether the coach may also trigger such behavior in a client with high trait submissiveness.

Finally, as we were interested in the impact of interpersonal dynamics during early coach–client interactions on coaching success, we focused on the micro-level behavior of coaches and clients in their first coaching session and measured outcomes after the fifth and last coaching session. Future research can also explore mediating variables and potential change dynamics throughout the entire coaching process. A longitudinal design should be adopted in order to clarify to what extent the coach could influence the client and how coaches' and clients' interpersonal behaviors may change throughout the coaching process. For example, as a client becomes more active and needs less guidance throughout the course of the coaching process, the client's dominance might increase and coach's dominance might decrease. Moreover, future research could compare reciprocity and reciprocity changes between successful and less successful dyads.

In addition to addressing these limitations, future research could also investigate how additional behavioral factors such as voice stress or physiological arousal affect interpersonal processes between coaches and clients (cf. Burgoon et al. 1992). Moreover, future research should examine whether coaches should always show dominant-friendly interpersonal behavior or whether different coaching conditions (e.g., voluntary vs. voluntary participation) may call for different dominance-affiliation combinations in order to promote coaching success. Finally, future research should explore how distinct combinations of verbal and nonverbal behavior affect coaching processes

and outcomes. Concerning the latter, future research should aim to combine clients' evaluations of coaching success with more objective outcome data, for example by obtaining peer- or supervisor ratings of goal attainment.

Conclusion

This study provides first insights into the role of interpersonal behavior in coaching processes. Using lag sequential analysis on coach–client interaction data, we found that interpersonal dominance and affiliation behavior of coaches and their clients tends to occur in reciprocal patterns, which are relevant for the course and outcome of coach–client interaction processes. Specifically, our results suggest that coaches who wish to activate their clients should express dominant-friendly behavior. This type of interpersonal behavior elicited dominant client behavior, which in turn was linked to clients' goal attainment at the end of the coaching process. Our findings highlight the importance of understanding the moment-to-moment dynamics in coach–client interactions for understanding successful coaching processes and outcomes.

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Appendix

Tables 10, 11, 12: Additional Pearson's correlations between aggregated overall frequencies of interpersonal coach and client behaviors and coaching outcomes. In all analyses below, goal attainment and working alliance were assessed after the final coaching session. Interpersonal dominance and goal attainment and working alliance were assessed after the final coaching session.

Table 10 Interpersonal dominance and goal attainment

Variable	(1)	(2)	(3)	(4)
Coach behavior ($N = 30$)				
(1) Submissive	–			
(2) Dominant	−.46**	–		
Client behavior ($N = 30$)				
(3) Submissive	.06	.12	–	
(4) Dominant	−.08	.05	−.72**	–
Goal attainment ($N = 29$)	−.32*	.12	−.49**	.46**

* $p < .05$; ** $p < .01$ (one-tailed)

Table 11 Interpersonal affiliation and working alliance

Variable	(1)	(2)	(3)	(4)
Coach behavior				
(1) Hostile	–			
(2) Friendly	−.19	–		
Client behavior				
(3) Hostile	−.11	−.02	–	
(4) Friendly	−.12	.36*	−.22	–
Working alliance ($N = 28$)	.05	.48**	−.12	.20

* $p < .05$; ** $p < .01$ (one-tailed)

Table 12 Dominance-affiliation combinations and coaching outcomes

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Coach behavior ($N = 30$)							
(1) Dominant-hostile	–						
(2) Dominant-neutral	.47**	–					
(3) Dominant-friendly	.05	.01	–				
Client behavior ($N = 30$)							
(4) Dominant-hostile	−.07	−.04	−.10	–			
(5) Dominant-neutral	−.25	−.12	−.03	.58**	–		
(6) Dominant-friendly	−.22	−.11	.50**	.15	.40*	–	
Working alliance ($N = 29$)							
(7)	.04	−.03	.49**	−.07	.07	.18	–
Goal attainment ($N = 28$)							
(8)	−.16	−.06	.23	.20	.40*	.39*	.31

* $p < .05$; ** $p < .01$ (one-tailed)

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